

REMARKS

The present application provides an improved method for preparing a transformed cotton plant which uses petioles as an explant. The method significantly enhances the efficiency of cotton transformation and shortens the time required to produce a transformed, regenerated plant.

Claims 1-14 and 16-19 are pending in the application. In this response claims 1 and 19 are amended to better define what applicants regard as their invention. Claim 16 is canceled.

Claim Objections

Applicants thank the Examiner for the indication that claim 19 would be allowable if the term "petiole" in step (a) is amended to be plural. In this response Applicants have amended step (a) to address this objection.

Rejection Under 35 U.S.C. § 112

Claims 1-14 and 16-19 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. The term "low concentrations of" used in claim 1 is asserted to be a relative term that renders the claim indefinite. Applicants thank the examiner for the indication that claims 9 and 18 would be allowable if amended to overcome this rejection.

In this response the term "low concentrations of" is deleted from step (c) of claim 1 and the term "one or more" is inserted. Claim 16 is canceled. Applicants respectfully assert that the amendment to claim 1 overcomes the rejection of claims 1 and claims 2-

14 and 16-18 which depend therefrom. Claim 19 is amended to provide antecedent basis for the limitation "the petiole explants" in part (b). Applicants respectfully request that the rejection under section 112, second paragraph be withdrawn.

Rejection Under 35 U.S.C. § 102(b)

Claims 1-6 and 16-17 are rejected under 35 USC §102(b) as being anticipated by Strickland (WO 97/12512). It is asserted that Applicants have not provided evidence from the art that Strickland is not enabled. Applicants respectfully traverse this rejection.

It is asserted that "Strickland teaches what Applicant claims, transformation of cotton petioles, culturing in the absence of plant hormones (which is a very 'low concentration' of hormones) and regeneration into plants". Thus, the rejection under Section 102(b) is apparently based on an interpretation of the term "low concentration" used in step (c) of claim 1 to mean the absence of plant hormones. While Applicants do not agree that "low concentration of," as used in claim 1, means the complete absence of hormones, they have amended claim 1 to remove this term from the claim. Applicants respectfully submit that to the extent "low concentrations of" can be interpreted to mean no hormone, this amendment overcomes the rejection. Because Strickland does not disclose a method for producing a transgenic cotton plant in which petiole explants are cultured in medium containing one or more plant hormones, Applicants respectfully ask that the rejection under 35 U.S.C. § 102(b) be withdrawn.

Rejections Under 35 USC § 103(a)

Claims 1-8 and 10-14 and 16-17 are rejected under 35 USC §103(a) as being unpatentable over Strickland (WO 97/12512) in view of Finer (Plant Cell Reports 7:399-402 (1988)). It is asserted that Finer is cited as disclosing a nitrogen source, not a hormone concentration. Applicants respectfully traverse this rejection.

As discussed above, Strickland does not teach the method of producing a transgenic cotton plant made using callus from a petiole explant by culturing explants in a medium containing one or more plant hormones.


Finer discloses a method for plant regeneration from somatic embryogenic suspension cultures of cotton initiated from cotyledonary tissues and not petioles. Nothing in Finer suggests a method for producing a transformed cotton plant, nor does it suggest that low concentrations of plant hormones such as those used in the present application can be used to provide an efficient method for producing callus from petiole tissues. In fact, Finer teaches away from Strickland in that it discloses a method in which the concentration of 2,4-dichlorophenoxyacetic acid in medium is increased ten-fold during proliferation of the embryogenic suspension culture. (See page 400 of Finer.)

Neither Strickland or Finer, taken individually or together, discloses or even suggests the invention of the present application. Therefore, Applicants respectively ask that the rejection under 35 USC § 103(a) over Strickland in view of Finer, as it may be applied to claims 1-8, 10-14 and 16-17, be withdrawn.

Conclusions

Applicants believe the claims 1-14 and 16-19 are in condition for allowance and respectfully request a timely notice to that effect. Should additional issues arise that can be effectively dealt with by a timely discussion with Applicants' representative, the Examiner is respectfully asked to contact the undersigned so that this case can be quickly passed to issue.

Respectfully submitted,

By 
Barbara Webb Walker
Attorney for Applicants
Registration No. 35,400
ROTHWELL, FIGG, ERNST & MANBECK, p.c.
Suite 800, 1425 K Street, N.W.
Washington, D.C. 20005
Telephone: (202) 783-6040